SPECIFICATION AMENDMENTS

Replace the paragraph beginning at page 1, line 7 with:

The present invention relates to a light receiving element module on which a semiconductor light ~~receiving~~ detecting element such as a photodiode is mounted, and, in particular, to a coaxial type light receiving element module ~~attached with~~ connected to an optical fiber or a light receiving element module with ~~a receptacle type~~ an adapter for connection of an optical fiber.

Replace the paragraph beginning at page 3, line 19 with:

A light receiving element module according to ~~claim 1 receives~~ the invention detects signal light emitted from an optical fiber and includes a lens which condenses signal light emitted from the optical fiber; a reflecting mirror which has a quadric surface which reflects the signal light condensed by the lens; and a light ~~receiving~~ detecting element which ~~receives~~ detects the signal light reflected by the reflecting mirror ~~to convert~~ and converts the signal light ~~to~~ into an ~~electric~~ electrical signal.

Replace the paragraph beginning at page 4, line 13 with:

The light receiving element module may include a trans-impedance amplifier which is arranged on the same flat face as the light ~~receiving~~ detecting element in proximity to the light ~~receiving~~ detecting element and amplifies the ~~electric~~ electrical signal converted by the light ~~receiving~~ detecting element.

Replace the paragraph beginning at page 4, line 24 with:

~~Next invention is a~~A light receiving element module ~~which receives~~ according to the invention detects signal light emitted from an optical fiber, and includes a stem ~~where~~ which signal pins penetrate; a base which is fixed in a direction perpendicular to the stem; a cap member which has a light passing-through hole and is fixed to the stem; a spherical lens which is inserted into the light passing-through hole and condenses signal light emitted from the optical fiber; a parabolic mirror which is arranged on the base and

reflects the signal light condensed by the spherical lens~~ by refracting the signal light~~ at~~ an~~ approximately a right angle; a light~~ receiving~~ detecting element which is arranged on the base and~~ receives~~ detects the signal light reflected by the parabolic mirror~~ to convert~~ and converts the signal light to an~~ electric~~ electrical signal; and a trans-impedance amplifier which is arranged on the base in proximity to the light~~ receiving~~ detecting element and amplifies the~~ electric~~ electrical signal~~ converted~~ produced by the light~~ receiving~~ detecting element.

Replace the paragraph beginning at page 5, line 13 with:

~~Next invention is a~~A light receiving element module~~ which receives~~ according to the invention detects signal light emitted from an optical fiber,~~ and~~ includes a stem~~ where~~ which signal pins penetrate; a base which is fixed in a direction perpendicular to the stem; a cap member which has a first light passing-through hole and is fixed to the stem; a window member which covers the first light passing-through hole; a lens holding member which has a second light passing-through hole and is fixed to the cap member; a spherical lens which is inserted into the second light passing-through hole and condenses signal light emitted from the optical fiber; a parabolic mirror which is arranged on the base and reflects the signal light condensed by the spherical lens~~ by refracting the signal light~~ at~~ an~~ approximately a right angle; a light~~ receiving~~ detecting element which is arranged on the base and~~ receives~~ detects the signal light reflected by the parabolic mirror~~ to convert~~ and converts the signal light to an~~ electric~~ electrical signal; and a trans-impedance amplifier which is arranged on the base in proximity to the light~~ receiving~~ detecting element and amplifies the~~ electric~~ electrical signal~~ converted~~ produced by the light~~ receiving~~ detecting element.

Replace the paragraph beginning at page 6, line 7 with:

Fig. 1 illustrates an appearance constitution of a light receiving element module according to a first embodiment;

Fig. 2 schematically illustrates a vertical sectional view of the light receiving element module in Fig. 1;

Fig. 3 is a diagram for explaining spreading of a Gaussian beam;

Fig. 4 is a diagram for explaining various symbols~~ (the first)~~;

Fig. 5 is a diagram for explaining various symbols~~ (the second)~~;

~~Fig. 6 is a diagram~~Figs. 6A and 6B are diagrams for explaining~~a~~ relationship between~~a~~ space between an object point and a lens and~~a~~ lateral magnification;

~~Fig. 7 is a diagram~~Figs. 7A and 7B are diagrams for explaining~~a~~ relationship between~~a~~ space between an object point and a lens and~~a~~ distance between an R point and an image point;

~~Fig. 8 is~~Figs. 8A and 8B are a horizontal sectional view and a vertical sectional view, respectively, of the light receiving element module in Fig. 1;

~~Fig. 9 illustrates arrangement relationship among a stem, a pin and a base, and the like~~Figs. 9A and 9B are longitudinal and sectional views, respectively, of the light receiving element module of Fig. 1;

~~Fig. 10 is a diagram for explaining electric connection between a light receiving element and a trans-impedance amplifier (the first)~~Figs. 10A, 10B, and 10C are, respectively, a vertical sectional view of the periphery of a parabolic mirror of the light receiving element module, a front view of the mirror, and a plan view of the light receiving element module with the mirror removed;

~~Fig. 11 is a diagram for explaining electric connection between a light receiving element and a trans-impedance amplifier (the second)~~ Figs. 11A, 11B, and 11C are, respectively, a vertical sectional view of the periphery of a parabolic mirror of the light receiving element module, a front view of the mirror, and a plan view of the light receiving element module with the mirror removed;

~~Fig. 12 is a diagram for explaining a light receiving element module of the second embodiment~~Figs. 12A, 12B, and 12C are, respectively, a vertical sectional view of the periphery of a parabolic mirror of the light receiving element module, a front view of the mirror, and a plan view of the light receiving element module with the mirror removed;

Fig. 13 explains a light receiving element module of a third embodiment; and

Fig. 14 explains a light receiving element module of a fourth embodiment.

Replace the paragraph beginning at page 7, line 10 with:

With reference to Fig. 1 to~~Fig. 11~~ Figs. 11A, 11B, and 11C, a light receiving element module of the first embodiment of this invention will be explained. The light receiving element module of this first embodiment~~take a~~ has the module aspect of an inexpensive can-package type, and a photodiode is housed in a package as a light ~~receiving~~ detecting element. Further, in the description, the light receiving element

module is a generic name given to ~~ones~~ modules including a light receiving element module which does not have a cap (a lid) for sealing.

Replace the paragraph beginning at page 7, line 24 with:

Fig. 2 schematically illustrates a vertical sectional view of the light receiving element module 3 for explaining ~~a~~ the light ~~receiving~~ detecting principle of the light receiving element module 3 of Fig. 1. Fig. 2 illustrates ~~a~~ the structure of ~~Fig. 8~~ Figs. 8A and 8B described later in a simplified manner, where illustration of some portions is omitted and some portions are illustrated in simplified manner.

Replace the paragraph beginning at page 10, line 9 with:

The arrangement of the optical fiber 20, the spherical lens 12, the parabolic mirror 16, and the light ~~receiving~~ detecting element 18 will be explained briefly. A virtual image of a light ~~receiving~~ detecting face (a photo detector, (hereinafter, "PD") light ~~receiving~~ detecting face) of a light ~~receiving~~ drafting element is ~~formed~~ located on an optical axis of signal light emitted from the optical fiber. On the other hand, a portion (hereinafter, "an emitting point") of the optical fiber from which a signal light is emitted is arranged on an object point, and a real image is imaged at the ~~emitting~~ imaging point of the optical fiber on the optical axis of the signal light by the spherical lens. At this time, the optical fiber 20, the spherical lens 12, the parabolic mirror 16 and the light receiving element 18 are arranged such that the position of the real image of the emitting point of the optical fiber is imaged on the position of the virtual image of the light ~~receiving~~ detecting face. That is, the virtual image is formed on the light ~~receiving~~ detecting face of the light ~~receiving~~ detecting element by the reflecting mirror on the optical axis of the lens, and the lens transfers the light emitting point of the optical fiber placed at the object point to the virtual image plane of the light ~~receiving~~ detecting face of the light ~~receiving~~ detecting element. In other words, such a constitution can be employed that a fiber image is formed on the optical axis of the lens, and the fiber image is transformed to the light ~~receiving~~ detecting face of the light ~~receiving~~ detecting element by the parabolic mirror.

Replace the paragraph beginning at page 11, line 5 with:

A specific design example of the spherical lens 12 and the parabolic mirror 16 will be explained next with reference to Fig. 3 to ~~Fig. 7~~ Figs. 7A and 7B. The magnification of the spherical lens 12 will be first explained using Fig. 3 to Fig. 5. Fig. 3 is a diagram for explaining spreading of a Gaussian beam, and Fig. 4 and Fig. 5 ~~illustrate~~ are diagrams for explaining various symbols.

Replace the paragraph beginning at page 12, line 6 with:

When considering, for example, a thickness tolerance of ±30 micrometers from Fig. 3, it is understood that the lateral magnification of 0.7 is optimal~~, the~~. However, a lateral magnification of about 1 is excellent in an optical system having a large optical axis shift (for example, of the defocus amount of 60 micrometers) and so on. Practically, considering an image blur due to the aberration of the optical system and an assembling tolerance, the lateral magnification of the whole optical system is set to a range of 0.5 to 1.

Replace the paragraph beginning at page 13, line 17 with:

A partial system of an optical system constituting the parabolic mirror 16 is explained with reference to Fig. 5. Considering that the parabolic mirror 16 is an ideal lens 162 with a focal length f2, and assuming that a spot radius formed on a light ~~receiving~~ detecting face of the light ~~receiving~~ detecting element is ωpd, a space between the light ~~receiving~~ detecting face and the principal plane is d0, a spot radius of a virtual image is ωpd', and the distance between the virtual image and the principal plane is d1 (which is a virtual image and takes a negative number), the lateral magnification m2 of the partial system and d1 can be expressed by the following equations.

$$\cancel{m = \frac{1}{\sqrt{\left(\frac{\pi\omega_1^2}{\lambda}\right)^2 C^2 + D^2}} \quad \cdots (3)}$$

$$\cancel{d_2 = \frac{-\left(\frac{\pi\omega_1^2}{\lambda}\right)^2\left(1-\frac{d_1}{f_1}\right)C-\left(d_0+d_1-\frac{d_0 d_1}{f_1 f_2}\right)D}{\left(\frac{\pi\omega_1^2}{\lambda}\right)C^2+D^2}} \quad \cancel{\ldots (4)}$$

$$\mathrm{m2} = \frac{\omega_{pd}}{\omega_{pd}'} = \sqrt{\left(\frac{\pi\omega_{pd}^2}{\lambda}\right)^2\left(\frac{1}{f_2}\right)^2+\left(1-\frac{d_0}{f_2}\right)^2} \quad \ldots (3)$$

$$d_1 = \frac{\left(\frac{\pi\omega_{pd}^2}{\lambda}\right)^2\left(\frac{1}{f_2}\right)-d_0\left(1-\frac{d_0}{f_2}\right)}{\left(\frac{\pi\omega_{pd}^2}{\lambda}\right)^2\left(\frac{1}{f_2}\right)^2+\left(1-\frac{d_0}{f_2}\right)^2} \quad \ldots (4)$$

Replace the paragraph beginning at page 14, line 8 with:

Fig.~~6(A)~~ 6A illustrates a lateral magnification m2 of the partial system corresponding to the distance d0 showing the space between the principal plane and the light~~receiving~~ detecting face (PD light~~receiving~~ detecting face) 18a of the light~~receiving~~ detecting element 18 regarding the parabolic mirror 16 having a parabolic face with a radius r varying from 0.55 millimeters to 0.95 millimeters. Further, Fig.~~6(B)~~ 6B illustrates the virtual image position d1 versus the distance d0 regarding the reflecting mirror having the paraboloid 16 with the radius r varying from 0.55 millimeter to 0.95 millimeter. Incidentally, introductory remarks in respective diagrams of~~Fig. 6~~ Figs. 6A and 6B mean the radius (millimeters) of the paraboloid of the parabolic mirror 16 and the space (millimeters) between the principal plane and the light~~receiving~~ detecting face (PD light~~receiving~~ detecting face) 18a of the light~~receiving~~ detecting element 18. That is, for example, m2 (0.55, d0) means the lateral magnification (m2) when the radius is 0.55 millimeter and the space between the principal plane and the PD light receiving face is d0.

Replace the paragraph beginning at page 15, line 2 with:

~~For~~In a simplified example~~, for simplification~~, assuming that the lateral magnification m of the entire optical system is one~~-time~~ and the lateral magnification m2

of the partial system obtained by the reflecting mirror of the parabolic face 16 is 0.5 ~~times~~, the distance between the point R (principal plane) and the PD light~~-receiving~~ detecting face 18a varies from 0.28 millimeter to 0.48 millimeter according to variation of the radius r of the reflecting mirror having the paraboloid 16 from 0.55 millimeter to 0.95 millimeter, which is suitable for~~-allowing~~ maintaining the height of the rising portion of a wire bond used for wiring of the light~~-receiving~~ detecting element 18, so that the wire bond and the reflecting mirror face of the parabolic mirror 16~~-can be prevented from coming in~~ do not contact~~-with~~ each other.

Replace the paragraph beginning at page 16, line 11 with:

The constitution of the parabolic reflecting mirror will be explained next. A hyperbolic reflecting mirror can achieve an aplanatic condition~~-on a non-spherical reflecting mirror~~ in the optical system illustrated in Fig. 2, and a parabolic reflecting mirror (the parabolic mirror 16) can achieve an aplanatic condition when it converges a collimated beam. However, the parabolic reflecting mirror has a~~-merit that its~~ rotation symmetry axis~~-and its~~ that is parallel to the optical axis~~-are parallel to each other~~,~~-a merit~~ so that forming molds can be manufactured by a mirror finishing lathe with a high cutting accuracy instead of a mirror finishing milling machine for manufacturing an oval surface or a hyperboloid, and~~-a merit that~~ assembling of the forming molds can be~~-made~~ easy

Replace the paragraph beginning at page 17, line 19 with:

The merits of the optical system are further explained with reference to Fig.~~-7(A)~~ 7A and Fig.~~-7(B)~~ 7B. As illustrated in Fig. 2, the lens 12 is mounted in the cap 13, and the cap 13 is welded on the stem 10~~-so as~~ to~~-attain~~ produce an air-tight structure, by~~-such~~ a method such as~~-a~~ projection welding. However, it is relatively difficult to secure position accuracy in the welding step. For example illustrated in Fig.~~-7(A)~~ 7A, if~~-the~~ misalignment Δ between the reflecting point R of the parabolic mirror 16 and the central axis of the lens 12 takes place when~~-the~~ welding~~-is performed~~, a decrease in the light ~~receiving~~ detection sensitivity about 2% occurs, when the misalignment Δ is 100 micrometers, as shown in Fig.~~-7(B)~~ 7B, due to the optical fiber 20 alignment Δ/m1 from the lens center 12~~, and also~~. Also, proper adjustment g between the lens principal plane and the fiber 20, where~~-the~~ m1 is lateral magnification of the partial system of the lens, is required. With such a constitution, when the optical fiber 20 or the receptacle 2 is

adjusted properly in the optical axial direction and a direction perpendicular to the optical axis, misalignment of respective parts are compensated for, so that a suitable optical coupling can be obtained.

Replace the paragraph beginning at page 18, line 11 with:

A detailed constitution of the light receiving element module 3 of Fig. 1 will be explained next. ~~Fig. 8(A)(B) illustrates~~ Figs. 8A and 8B illustrate a horizontal sectional view and a vertical sectional view of the light receiving element module 3 of Fig. 1. As illustrated in ~~Fig. 8~~ Figs. 8A and 8B, the light receiving element module 3 is provided with a disc-like stem 10 mounted with signal pins 41a and 41b ~~constituted~~ that constitute a differential feed, a supplying pin 43a for a bias voltage to a photodiode 18, a supplying pin 43b for a power source voltage to the trans-impedance amplifier 19, ground pins 42a and 42b and the like, a trapezoidal column-shape base 11 mounted with a parabolic mirror 16 and a plurality of elements, a spherical lens 12 for condensing signal light emitted from the optical fiber 20, a cylindrical cap member 13 for sealing the base 11 and the like from the outside, a receptacle 2 in which a ferrule 21 connected with the optical fiber 20 is inserted, and the like.

Replace the paragraph beginning at page 20, line 10 with:

The constitution of the interior of the can package 1 will be explained next. ~~Fig. 9 illustrates~~ Figs. 9A and 9B illustrate arrangement relationship among the stem 10, the pins and the base 11. As illustrated in ~~Fig. 9~~ Figs. 9A and 9B, the can package 1 is constituted with a disc-like stem 10 ~~mounted~~ with a plurality of pins and a trapezoidal column-like base 11 fixed to an inner wall face of the stem 10 in a ~~perpendicular~~ direction perpendicular thereto by Ag brazing or the like.

Replace the paragraph beginning at page 21, line 6 with:

In further detailed explanation, the stem 10 is formed of metal, such as kovar (Fe - Ni alloy), soft iron or CuW (copper tungsten), and plating of Ni, gold or the like is ordinarily ~~performed on~~ applied to an upper layer of the stem. Further, for example, in the case of kovar (Fe - Ni alloy) or soft iron, the stem 10 can be manufactured by punching out a metal plate thereof ~~by~~ with a die. For example, in the case of CuW, the

stem can be manufactured using a metal injection molding technique, and the manufacturing cost is ~~inexpensive~~ low because of the process is simple. The stem 10~~-is formed with~~ includes a plurality of holes 51, 53a, and 53b in a dispersed manner, and dielectrics 61, 63a, and 63b are respectively inserted into these holes 51, 53a, and 53b.

Replace the paragraph beginning at page 22, line 4 with:

As the dielectrics 61, 63a, and 63b, for example, kovar glass (soda barium glass), boro-silicated glass, or the like is used. Further, as the signal pins 41a and 41b, the voltage supplying pins 43a and 43b, and the ground pins 42a and 42b, for example,~~-such~~ a metal such as kovar, 50% Ni - Fe alloy, or the like is used.

Replace the paragraph beginning at page 24, line 1 with:

An output terminal for a differential signal from the trans-impedance amplifier 19 is connected to pads of the differential line substrate 31 and the like via wire bonds 96a and 96b. Further, the trans-impedance amplifier 19 is connected to pads of the light ~~receiving~~ detecting element 18, the light~~-receiving~~ detecting element circuit element 32 and the like via wire bonds (which will be described later~~-in explanation~~ regarding~~-Fig. 10~~ Figs. 10A, 10B, and 10C). The trans-impedance amplifier 19~~-performs~~ converts current/voltage~~-conversion on~~ of an~~-electric~~ electrical signal~~-inputted~~ received from the light~~-receiving~~ detecting element 18~~-to amplify~~ and amplifies the~~-same~~ electrical signal.

Replace the paragraph beginning at page 24, line 22 with:

The parabolic mirror 16 is formed in a plastic mold. As illustrated in~~-Fig. 8~~ Figs. 8A and 8B, the parabolic mirror 16 has a reflecting surface 16a~~-shaping~~ in the shape of a paraboloid, and~~-it is formed with~~ includes a groove (refer to~~-Fig. 10~~ Figs. 10A, 10B, and 10C) for connecting the light~~-receiving~~ detecting element 18 and the trans-impedance amplifier 19 via a wire bond. The reflecting surface 16a is given with a base film with an excellent adhesion such as chromium and then~~-applied with such~~ a metal film such as gold, aluminum, silver with a high reflectivity is applied using~~-such~~ a method such as electron beam vapor deposition or sputtering. Further, the reflecting film may be one where dielectric~~-multi-layer~~ film with multiple layers of titanium dioxide or silicon dioxide, or alumina or tantalum pentoxide has been used, or it may be one where a

protective film of dielectric has been applied on a metal film. Incidentally, an effect for prevention of short-circuiting with a wire bond can be achieved by applying an insulating film on a surface of the reflecting surface 16a, which is preferable.

Replace the paragraph beginning at page 25, line 12 with:

The reflecting surface 16a of the parabolic mirror 16~~serves to reflect~~ reflects signal light condensed by the spherical lens 12 at an angle of about 90°~~and reflects the same to cause the signal light to reach~~ so the signal light reaches the light~~receiving~~ detecting face 18a of the light~~receiving~~ detecting element 18, and the reflecting surface 16a~~is formed in~~ has a parabolic shape, so that~~aberration is~~ aberrations are hardly generated and the responsivity of the light~~receiving~~ detecting element 18 can be increased.

Replace the paragraph beginning at page 25, line 24 with:

~~Fig. 10 is a diagram~~Figs. 10A, 10B, and 10C are diagrams for explaining~~electric~~ electrical connection of the light~~receiving~~ detecting element 18 and the trans-impedance amplifier 19, wherein Fig.~~10(A)~~ 10A is a vertical sectional view of the periphery of the parabolic mirror 16, Fig.~~10(B)~~ 10B is a front view, and Fig.~~10(C)~~ 10C is a plan view when the parabolic mirror 16 has been removed. As illustrated in Fig.~~10(A)~~ Figs. 10A to ~~(C)~~ 10C, the light~~receiving~~ detecting element 18 and the trans-impedance amplifier 19 are mounted on one flat face of the base 11 in proximity to each other. The light ~~receiving~~ detecting element 18 mounted on the light receiving element substrate 17 includes a photodiode of a surface incident type having a light~~receiving~~ detecting face on a surface side, and a light~~receiving~~ detecting face (a photodiode portion) 18a and a pad 18b (for example, a p-side electrode) which is an electrode~~are formed~~ on the surface side. Further, an electrode (for example, an n-side electrode) is~~formed~~ located on the side of the light receiving element substrate 17.

Replace the paragraph beginning at page 26, line 13 with:

A groove 16b for connecting the light~~receiving~~ detecting element 18 and the trans-impedance amplifier 19 by a wire bond is formed on the parabolic mirror 16. Incidentally, the groove 16b has a semi-cylindrical shape in the drawing, but it is not

limited to this shape. For example, the groove may have a rectangular parallelepiped shape. That is, if the groove penetrates the parabolic mirror~~10~~ 16 like a tunnel in a state that the parabolic mirror 16 has been mounted on the base 11, it can take any shape. A pad 19b for inputting an electric signal and a ground 19a are formed on the trans-impedance amplifier 19. A pad 18b on an anode side of the light~~receiving~~ detecting element 18 and the pad 19b of the trans-impedance amplifier 19 are respectively bonded to one end~~side~~ and the other end~~side~~ of a wire bond 70b. An electrode (not illustrated) on a cathode side of the light~~receiving~~ detecting element 18 is soldered an electrode 17a of the light receiving element substrate 17. An electrode 17a of the light receiving element substrate 17 is connected to a light receiving element circuit element 32 via a wire bond 17c, and the light receiving element circuit element 32 is connected to a voltage pin 43a. An electrode on a back face of a capacitor 32b is connected to the electrode 17a of the light receiving element substrate 17. An electrode on a surface of the capacitor 32b is connected to a ground face 17b of the light receiving element substrate 17 via a wire bond 70e. Further, an electrode on a surface of the capacitor 32b is connected to the ground 19a of the trans-impedance amplifier 19 via a wire bond 70a. The ground face 17b of the light receiving element substrate 17 is connected to a surface (a ground face) of the base 11 via a through hole 17c.

Replace the paragraph beginning at page 27, line 14 with:

~~Fig. 11 (A)~~Figs. 11A to~~(C) is a diagram~~ 11C are diagrams for explaining~~electric~~ electrical connection of the light~~receiving~~ detecting element 18 and the trans-impedance amplifier 19, wherein, as another example~~of Fig. 10(A)~~, Figs. 10A to~~(C)~~ 10C, Fig.~~11(A)~~ 11A is a vertical sectional view of the periphery of the parabolic mirror 16, Fig.~~11(B)~~ 11B is a front view and Fig.~~11(C)~~ 11C is a plan view when the parabolic mirror 16 has been removed. As illustrated in~~Fig. 11(A)~~ Figs. 11A to~~(C)~~ 11C,~~a~~ the structure may be simplified by using a parallel flat-plate capacitor 170 of a ceramic chip type instead of the light receiving element substrate 17. In this case, a back face of the light~~receiving~~ detecting element 18 is mounted on an upper face of the capacitor 170 of a ceramic chip type and the back face of the capacitor 170 of a ceramic chip type is connected to a ground face of the base 11. That is, flat faces of electrodes at both ends of the capacitor 170 are made parallel, fixation is made such that the electrode at a lower end of the capacitor 170 is electrically connected to the ground face of the base 11, and placement is made such that the electrode at an upper end of the capacitor 170 is electrically connected

to the electrode at a back face side of the photodiode. Further, the ground 19a of the trans-impedance amplifier 19 is connected to the ground face of the base 11 in the same manner as ~~Fig. 10(A)~~ in Figs. 10A to ~~(C)~~ 10C. Furthermore, the pad 19b of the trans-impedance amplifier 19 is connected to the pad 18b of the light ~~receiving~~ detecting element 18.

Replace the paragraph beginning at page 29, line 20 with:

Since the light passing-through hole 14 in which the spherical lens 12 is inserted is ~~formed~~ in the cap member 13 and a sealed structure is realized by inserting the spherical lens 12 into the light passing-through hole 14, ~~the~~ a reliable sealed structure can be realized inexpensively~~, and a reliable sealed structure can be realized~~.

Replace the paragraph beginning at page 30, line 8 with:

A light receiving element module of the second embodiment will be explained with reference to ~~Fig. 12~~ Figs. 12A to 12C. In the light receiving element module of the first embodiment, the photodiode 18 of the surface incident type is used as the light ~~receiving~~ detecting element. In the light receiving element module of the second embodiment, a photodiode 180 of a back surface incident type is used so that a groove of the parabolic mirror 16 for connecting the light ~~receiving~~ detecting element 180 and the trans-impedance amplifier 19 via a wire bond becomes unnecessary. ~~Fig. 12 is a diagram~~ Figs. 12A to 12C are diagrams for explaining ~~electric~~ electrical connection of the light ~~receiving~~ detecting element 180 and the trans-impedance amplifier 19, wherein Fig. ~~12(A)~~ 12A is a vertical sectional view of the periphery of the parabolic mirror 16, Fig. ~~12(B)~~ 12B is a front view and Fig. ~~12(C)~~ 12C is a plan view where the parabolic mirror 16 has been removed. In ~~Fig. 12~~ Figs. 12A, 12B, and 12C, like reference numerals are designated to portions having functions equivalent to those in ~~Fig. 10~~ Figs. 10A, 10B, and 10C.

Replace the paragraph beginning at page 30, line 23 with:

As illustrated in ~~Fig. 12~~ Figs. 12A, 12B, and 12C, a light ~~receiving~~ detecting element 180 mounted on a light receiving element substrate 175 includes a photodiode of a back face incident type having a light ~~receiving~~ detecting face on a back face, and a

light~~receiving~~ detecting face (a photodiode portion) 180a is formed on the back face side. A pair of electrodes 175a and 175c (a pair of p-side and n-side electrodes) are formed on surface side of the light receiving element substrate 175. A pair of unillustrated terminals (an anode and a cathode) of the light~~receiving~~ detecting element 180 are respectively connected to the electrodes 175a and 175c of the light receiving element substrate 175 by soldering. Further, a back surface electrode of a capacitor 32b is soldered on an upper face of the electrode 175a. A surface electrode of the capacitor 32b is connected to another conductor pad 175b of the light receiving element substrate 175. The conductor pad 175b is connected to a surface of the base 11 via a through hole 175e. One end of a wire bond 70a is bonded to another conductor pad 175d of the light receiving element substrate 175, and the other end of the wire bond 70a is connected to a pad 19a of the trans-impedance amplifier 19. The surface electrode of the capacitor 32b is also connected to a conductor pad 175d of the light receiving element substrate 175. One end of a wire bond 70b is connected to an electrode 175c and the other end of the wire bond 70b is bonded to a pad 19b of the trans-impedance amplifier 19.

Replace the paragraph beginning at page 31, line 20 with:

According to the light receiving element module of the second embodiment, since the photodiode of the back face incident type is used as the light~~receiving~~ detecting element 180, it is made unnecessary to provide the groove 16b (refer to~~Fig. 10 of~~ Figs. 10A to 10C) in the parabolic mirror 16 for connecting the light~~receiving~~ detecting element 180 and the trans-impedance amplifier 19 via a wire bond, so that working for the groove 16b of the parabolic mirror 16 is made unnecessary and manufacturing cost of the parabolic mirror 16 can be reduced.

Replace the paragraph beginning at page 32, line 24 with:

According to the light receiving element module of the third embodiment, since the trans-impedance amplifier 19 is arranged on the front stage side of the light~~receiving~~ detecting element 18 on the base 11, it is made possible to save~~a~~ space in the widthwise direction (a horizontal direction) of the light receiving element module by~~a~~ the space for ~~arranging~~ the trans-impedance amplifier 19, as compared with the light receiving element module of the first embodiment.~~Further, the parabolic mirror 16 is also narrowed in the lateral direction to almost same extent.~~

Replace the paragraph beginning at page 33, line 7 with:

Furthermore, the wire bonds 70a and 70b for connecting the trans-impedance amplifier 19 and the light receiving element 18 can be arranged ahead of the parabolic mirror 16 (on the side of the optical fiber 20), and the trans-impedance amplifier 19 and the light receiving element 18 can be connected to each other~~unless the groove 16b allowing passing through a wire bond is provided on a back face of the parabolic mirror 16~~ as shown in Figs. 10A, 10B, and 10C. ~~Incidentally, the wire bonds 95a and 95b are arranged so as to avoid the parabolic mirror 16.~~

Replace the paragraph beginning at page 34, line 14 with:

As illustrated in Fig. 14, a light passing-through hole 81 is formed in the cap member 13, and the light passing-through hole 81 is covered with a transparent member (a window member) 82 which is formed of cover glass or the like and is fixed to an inner wall of the cap member 13~~formed with~~ including the light passing-through hole 81 by a ~~low melding point~~ solder glass or the like. A sealed structure is achieved by the transparent member 82. The lens holding member 80 which~~is~~ has a cylindrical shape and, where a light passing-through hole for inserting the spherical lens 12 is~~formed~~ located, is fixed to the cap member 13. The spherical lens 12 is inserted into the light passing-through hole and fixed therein by adhesive or the like. Further, the receptacle 2 is fixed in the lens holding member 80.

Replace the paragraph beginning at page 35, line 11 with:

As explained above, according to the present invention, since the light receiving element module~~is constituted so as to~~ includes a lens which condenses signal light emitted from an optical fiber, a reflecting mirror which has a quadric surface reflecting surface reflecting the signal light condensed by the lens, and a light~~receiving~~ detecting element which~~receives~~ detects the signal light reflected by the reflecting mirror~~to convert~~ and converts the~~same to~~ light into an~~electric~~ electrical signal,~~the signal light condensed by the lens is inputted into the reflecting mirror, so that~~ the region of the reflecting surface of the reflecting mirror can be made small and the reflecting mirror can be reduced in size. As a result, influence of a thermal expansion coefficient due to

material for the reflecting mirror can be reduced and structure of the module can be simplified. Further, it is made possible to provide an inexpensive light receiving element module which can be reduced in size.